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ABSTRACT

This study examined the impact of mid-semester student ratings feedback on a faculty's end-of-semester student ratings. The positive direction of the end-of-semester ratings in the two mid-semester feedback groups lent support to the premise that cognitive dissonance theory and various forms of mid-semester, student rating feedback can be used to improve teaching. Of the 158 faculty members invited to participate, 61 volunteered. In the control group, faculty members were rated by students at the end of the semester. In the first treatment group (feedback group), members rated themselves at mid-semester and also received student ratings at mid-semester. The other treatment group (consultation group), faculty members rated themselves and were rated by students as above, but they also received a group consultation (workshop) with their feedback. The means (except for involving students) were greater for the workshop group than for the feedback group, and the means for the feedback group were greater than for the control group. (Contains 2 tables and 18 references.) (SLD)

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Utilizing Cognitive Dissonance Theory to Improve Student Ratings of College Faculty Members

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ABSTRACT

This study examined the impact of mid-semester student ratings feedback on a faculty's end-of-semester student ratings. The positive direction of the end-of-semester ratings in the two mid-semester feedback groups lent support to the premise that cognitive dissonance theory and various forms of mid-semester, student rating feedback can be used to improve teaching.

Utilizing Cognitive Dissonance Theory to Improve Student Ratings of College Faculty Members

Formal student evaluations are conducted at most colleges for both full-time and part-time faculty members with the assumption that instructors will use this information to improve their teaching (Centra, 1973). Some studies have indicated that student feedback has had a positive effect on teaching performance and that student ratings are moderately correlated with student learning (Centra, 1973, 1993). Overall, student ratings have also been shown to improve significantly when faculty receive augmented feedback (Brinko, 1990; Cohen, 1980). Cohen (1980) recommended that more studies needed to be done to verify the impact of student ratings on teaching behavior. This study, based on an experiment by Centra (1973), addressed using student ratings to improve teaching effectiveness as measured by student ratings of university faculty members. This study examined using not only student ratings but also augmenting student ratings with faculty consultation to improve teaching effectiveness.

The experiment by Centra (1973) was based on the theory of cognitive dissonance. When teaching was evaluated at mid-semester less favorably than the faculty member expected, it was presumed that faculty members valued the opinions of their students enough to change their instructional methods at mid-semester to be more responsive to students' needs (Centra, 1973). Several theories provide justification for this belief (Daw & Gage, 1967; Festinger, 1957; Gage, Runkle & Chaterjee, 1963; Heider, 1958; Newcomb, 1959). The theory of cognitive dissonance holds that when a discrepancy exists between an individual's perceptions and behavior, the individual seeks to make the perceptions and the behaviors more congruent, thereby resolving the dissonance (Festinger, 1957).

With the application of this theory to this study, the ratings given by the students at mid-semester, the instructors' self-ratings, the discrepancy scores, the written feedback, and the consultation workshop were expected to influence or explain the changes observed on the overall teaching effectiveness measure. This means that the higher end-of-semester student ratings should have reflected improvements in teaching behaviors. If the students' mid-semester ratings were lower than the mid-semester self-ratings of the faculty members, the faculty members were expected to improve their teaching behavior in order to be more congruent with their students' higher expectations.

One of the purposes of this experimental study was to test again the theory of cognitive dissonance that compared discrepancies in student and faculty ratings to changes in faculty members' teaching behavior as measured by end of the semester student ratings. Other purposes for this study were to recommend: (a) new policies and procedures for faculty evaluation systems and (b) additional needed research. The research question in this study was: What are the effects of written feedback and group consultation on faculty-specific teaching behaviors as measured by student ratings? (Carson, 1999). The null hypothesis for this study was: Having statistically controlled for student motivation, there is no statistically significant mean difference among the three groups of instructors with respect to end of semester student ratings.

Method

The Sample

All 158 faculty members at a small, private college were invited in December of 1998 to participate in this study by their Vice President for Academic Affairs. Approximately 73 faculty members at this college were full-time and approximately 85 were part-time. Sixty-one faculty members volunteered to participate in this study (59 full-time faculty members and two part-time

faculty members). Random selection, based on a table of random numbers, was used to assign 20 volunteers to each of the three groups (with the consultation group having one extra instructor).

To test the hypothesis for this study the following three groups were used:

1. In one faculty group, identified as the control group, faculty members were rated by the students at the end of the semester. This group received only written feedback after the end of the semester.
2. In the first treatment group, identified as the feedback group, faculty members rated themselves at mid-semester and were rated by students at mid-semester. This first treatment group received prompt, mid-semester written feedback on discrepancies between their ratings and their students' ratings. At the end of the semester, they were rated again by their students.
3. In a second treatment group, identified as the consultation group, faculty members rated themselves at mid-semester and were rated by students at mid-semester. The faculty members in this group received prompt, mid-semester written feedback on their ratings and their students' ratings. In addition to the prompt feedback, they received a one-hour, group consultation (workshop) with their feedback. At the end of the semester, they were rated again by their students.

Variables and their Measurement

The levels of the experimental/independent variable included: 1) the written feedback provided to the feedback group, 2) the group consultation provided in conjunction with the written feedback to the consultation group, and 3) the control group. The five dependent variables were the changes in the teaching effectiveness (behavior) as measured by changes in

the student ratings at mid-semester compared to those ratings at the end of the semester as measured by the student rating instrument. Discrepancy scores were computed for each faculty member by taking the average of the students' ratings on a specific outcome variable and then subtracting that figure from the faculty's own ratings on the same outcome variable. The researchers were aware of the problems typically found when dealing with this type of score, that is: low reliability, restricted range, and issues involving response set. These limitations on discrepancy scores were partially overcome by the application of appropriate statistical procedures, such as: analysis of covariance and repeated-measures of ANOVA (Gall, Borg, & Gall, 1996). The covariate variable used here was the item dealing with students' motivation as described in the student rating instrument.

Instrumentation

The staff of the Individual Development and Educational Assessment (IDEA) Center at Kansas State University (KSU) focuses on the assessment and improvement of teaching and learning at colleges and universities. The instrument used in this study for instructor self and student ratings, the IDEA Student Rating of Instruction System (long form), was designed to improve student learning (Hoyt & Cashin, 1977). There are 47 items on this questionnaire designed to measure teaching behaviors; however, only responses to the first 20 items were used in this investigation plus the motivation item. These items follow a Likert-type format with a code that included a "hardly ever" response to an "almost always" frequency response.

Reliability and validity studies have been conducted for the IDEA instrument in university teaching. (Hoyt & Cashin, 1977; Marsh, 1984, Marsh, 1994). Most studies provided acceptable indices of internal consistency and relevant confirmatory information about the dimensionality of the instrument. More specifically, the reliability of the IDEA Survey Form for

student ratings had been previously established through a correlation study (Hoyt & Cashin, 1977). The estimated reliabilities ranged from .81 to .94, and averaged .87. Standard errors of measurement averaged about 0.3. The validity of the IDEA Survey Form had also been previously established in a number of ways (Hoyt & Cashin, 1977). The IDEA survey asks students to give the same kind of ratings as other student rating systems. Thus, the validity of those parallel systems had been applied as well to the IDEA system. Further validity was established by validating certain aspects that are unique to the IDEA system including: (a) students' reports of progress, (b) the relationships between teaching methods and objectives, and (c) the influence of class size and student motivation.

Analyses of Data

Hoyt and others (1999) have grouped these 20 teaching behaviors (items 1-20 on the IDEA Survey Form) into the following five factors: (a) student-faculty contact (items 1, 2, 20); (b) involving students (items 5, 9, 14, 16, 18); (c) establishing expectations (items 3, 4, 8, 13, 15); (d) clarity of communication (items 6, 10, 11); and (e) assessment/feedback (items 7, 12, 17, 19). The 20 items were grouped into these five factors for analysis on the IDEA Reports. These same five factors were used to represent the five dependent variables (teaching behaviors) in the data analyses for this study.

The study hypothesis was analyzed with a multivariate analysis of covariance (Glass & Hopkins, 1996; Harris, 1975; Popham & Sirontnik, 1992). The control variable was student motivation and was measured by item 39 on the IDEA Survey Form which reads, "I really wanted to take this course no matter who taught it." In addition to the IDEA system, the researchers developed a discrepancy feedback sheet. These sheets were utilized to provide written feedback to faculty members. This feedback sheet consisted of the 20 Teaching Method

items from the IDEA system. The class average on each item, the instructor's self-rating on each item, and the calculated discrepancy scores on each item were listed on this sheet which was given to the faculty members in the feedback and consultation groups at mid-semester.

Collection of Data

In the spring of 1999, one researcher worked with the administrative assistant to the Vice President for Academic Affairs to obtain the student evaluations from the three separate groups at mid-semester and at the end of the semester at the college. The IDEA evaluation forms were processed by the IDEA Center at KSU in Manhattan, Kansas. The instructors' self-rating forms were processed by the researcher who calculated the 20 discrepancy scores for each of the 39 faculty members in the two experimental groups.

The evaluation forms were handled in the same manner as the other student ratings at this college. The forms were picked up by the faculty member. Then a student was selected by the faculty member to distribute the forms in class without the instructor present. The student collected the rating sheets after they were completed. The student then returned the forms in a sealed envelope to the vice president's office. Once all of the forms were returned, they were packed and shipped by the researcher to the IDEA Center for processing. The same process was followed at both mid-semester and at the end of the semester.

Results

Table 1 contains the descriptive statistics used in the between group comparisons. The descriptive statistics used in the between group comparisons included the means of each group on each of the five student rating factors. These means were calculated individually for each instructor by using his or her individual items scores from the items associated with the appropriate factor and dividing these scores by the appropriate number of students. Thus each

instructor in the three groups had five individual average scores on the five factors. These factor scores were then averaged for each group resulting in means for each of these factors for each group.

The multivariate test, the *Wilks' Lambda*, was used to analyze the data for the between groups hypothesis. Student motivation was the control variable used in this analysis. Table 2 outlines the results of this multivariate test. As indicated on Table 2, the results did not reflect the anticipated significant differences between the end-of-the-semester student ratings of the groups. The student motivation covariate did result in significance, but marginally. This significance had been expected based on the previous literature review (Centra, 1973).

The results in Table 2 indicated there was a statistically significant difference between the three groups with respect to the covariate, student motivation: $F = 2.364$, $p = .053$. However, there was no statistically significant difference between the three groups of instructors with respect to end-of-semester student ratings, $F = .359$, $p = .961$, indicating that there was no apparent treatment effect across the three levels of the independent variable and the five outcome measures.

Even though there was no significant difference between the experimental groups of instructors with respect to the end-of-the-semester student ratings, all of the means, except one, were consistent with the predicted positive direction (see Table 1). The only mean that did not reflect the positive predicted direction was the mean for the factor of "involving students", which was larger for the feedback group than for the consultation group (3.57 vs. 3.53). All of the means (except for involving students) were greater for the workshop group than for the feedback group or the control group. All of the means for the feedback group were greater than those of the control group. This finding in itself provides some support for the conclusion that

Table 1. Dependent Variables Means Used in Between Groups Comparison For Hypothesis One

Dependent Variables	Group	Dependent Variables Means	Standard Deviation	N
Student-Faculty Contact	Consultation	4.08	.45	20
	Feedback	4.06	.48	19
	Control	3.98	.43	19
Involving Students	Consultation	3.53	.68	20
	Feedback	3.57	.76	19
	Control	3.35	.68	19
Establishing Expectations	Consultation	4.00	.49	20
	Feedback	3.97	.48	19
	Control	3.84	.53	19
Clarity of Communication	Consultation	4.21	.33	20
	Feedback	4.11	.45	19
	Control	3.97	.59	19
Assessment/ Feedback	Consultation	3.99	.50	20
	Feedback	3.96	.50	19
	Control	3.87	.53	19

Table 2. *Wilks' Lambda* Statistics For the Multivariate Analysis of Covariance

Effect	Value	F	Hypothesis df	Error df	P value
Motivation	.809	2.364	5	50.	.053
Group	.932	.359	10	100.	.961

written feedback combined with a one-hour group consultation seems to have a positive effect on teaching effectiveness. Additionally, t-*tests* on all 20 teaching behaviors were computed. The results supported the predicted positive direction with 17 of the 20 means of the consultation group higher than those of the control group, 13 of the 20 means of the consultation group higher than those of the feedback group, and 20 of the 20 means of the feedback group higher than those of the control group at the end of the spring semester.

Discussion

Regarding the hypothesis and controlling for student motivation, there was no statistically significant difference among the three groups of instructors with respect to end-of-semester student ratings, (see Table 2). The lack of significance could have resulted from a number of possible reasons. These include: (a) the extensive exposure to faculty evaluations, (b) the short one-semester time frame, (c) the length of the IDEA long form, (d) the sample size, (e) the group, rather than individual, nature of the consultations, and (f) inherent limitations of the student and faculty ratings due to response sets typically found in self-rating scales.

A number of assumptions were made regarding this study. The following briefly looks at these assumptions in light of the findings. The findings did provide some positive support for the assumption that cognitive dissonance is a reliable theory with real application potential for improving teaching effectiveness (student ratings) among college faculty members. The positive means of the treatment groups indicated that feedback in general is valuable. The assumption that faculty members value the opinions of their students enough to change their instructional methods to be more responsive to students' needs was supported to a degree based on the positive direction of the means on the dependent variables. The assumption that student feedback, augmented by group consultation, is a useful method for improving teaching

effectiveness among college faculty members has merit in that all of the means for this group reflected a positive direction. Although this study did not result in statistically significant group differences, Brinko's (1990) study supported this assumption with statistically significant results. Brinko's more positive results may have been due to the fact that individual consultation rather than group consultation was utilized in her research.

Recommendations for further study include: (a) replicating this study over a two-semester period; (b) conducting this study using individual as opposed to group consultation; (c) conducting this study in a qualitative format with interviews with students and with faculty members; (d) conducting this type of study with an institution's own instrument; and (e) conducting this type of study with only new faculty members.

The implications of this study for policies and practices include the following: (a) student evaluations are an important means to improve teaching effectiveness, (b) self-evaluation by faculty members can result in positive insights to teaching effectiveness, (c) discrepancy scores between self and student evaluations at mid-semester can provide valuable information to faculty members, and (d) a workshop/consultation approach to student ratings feedback at mid-semester can be an effective, low-cost means to improve teaching effectiveness.

Higher education today continues to face numerous challenges. In response to some of these challenges, teaching effectiveness can always be improved. One aspect of teaching effectiveness is improved teaching behaviors. Student evaluations are conducted by most institutions of higher education with the goal of improving student ratings of instructors and thereby improving teaching effectiveness. The positive change of student ratings in this study lends support to the premise that cognitive dissonance theory and mid-semester student feedback can be used to improve the student ratings of college teachers.

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